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## HIGH-SPEED TRANSMISSION SYSTEM FOR OPTICAL CHANNELS

### ABSTRACT OF THE DISCLOSURE

5        A method and apparatus for transmission of data on bandwidth limited fiber optic channels. A multilevel signaling alphabet having multiple levels of optical intensity are used to transmit signals on optical channels. In order to counteract the decrease in signal to noise ratio resulting from the use of a multilevel signaling alphabet over a bilevel signaling alphabet trellis encoding of the data to be transmitted is employed. To  
10      counteract intersymbol interference due to signaling faster than the Nyquist Rate, equalization methods such as Tomlinson-Harashima precoding and decision feedback equalization are employed.

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